

Title (en)

Perpendicular magnetic recording write head with notched trailing shield and method for making

Title (de)

Senkrechter Magnetaufzeichnungsschreibkopf mit gekerbter Abschirmung und Verfahren zu dessen Herstellung

Title (fr)

Tête d'écriture et d'enregistrement magnétique perpendiculaire à blindage arrière entaillé et son procédé de fabrication

Publication

EP 1852855 A1 20071107 (EN)

Application

EP 07250702 A 20070220

Priority

US 37996906 A 20060424

Abstract (en)

The invention is a perpendicular magnetic recording write head with a write pole, a trapezoidal-shaped trailing shield notch, and a metal gap layer between the write pole and notch. The write pole has a trailing edge that has a width substantially defining the track width and that faces the front edge of the notch but is spaced from it by the gap layer. The write head is fabricated by a process that includes reactive ion beam etching of a thin mask film above the write pole to remove the mask film and widen the opening at the edges of the write pole. The gap layer and notch are deposited into the widened opening above the write pole. The write pole has nonmagnetic filler material, such as alumina, surrounding it except at its trailing edge, where it is in contact with the gap layer, which is formed of a different material than the surrounding filler material.

IPC 8 full level

G11B 5/127 (2006.01); **G11B 5/11** (2006.01); **G11B 5/31** (2006.01)

CPC (source: EP US)

G11B 5/11 (2013.01 - EP US); **G11B 5/1278** (2013.01 - EP US); **G11B 5/3116** (2013.01 - EP US); **G11B 5/3146** (2013.01 - EP US); **G11B 5/3163** (2013.01 - EP US); **Y10T 29/49039** (2015.01 - EP US); **Y10T 29/49043** (2015.01 - EP US); **Y10T 29/49044** (2015.01 - EP US); **Y10T 29/49046** (2015.01 - EP US); **Y10T 29/49048** (2015.01 - EP US); **Y10T 29/49052** (2015.01 - EP US)

Citation (applicant)

- US 2003231426 A1 20031218 - SATO YOSHIKAZU [JP]
- US 2004218312 A1 20041104 - MATONO NAOTO [JP]

Citation (search report)

- [X] US 2003231426 A1 20031218 - SATO YOSHIKAZU [JP]
- [Y] US 2004218312 A1 20041104 - MATONO NAOTO [JP]
- [Y] US 2004212923 A1 20041028 - TAGUCHI TOMOKO [JP]
- [Y] US 2005068665 A1 20050331 - LE QUANG [US], et al
- [Y] US 5567333 A 19961022 - HIRA YASUO [JP], et al
- [A] US 2006044681 A1 20060302 - LE QUANG [US], et al
- [A] US 2005190491 A1 20050901 - LE QUANG [US], et al
- [A] EP 1519364 A1 20050330 - HITACHI GLOBAL STORAGE TECH [NL]

Designated contracting state (EPC)

DE FR GB

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

EP 1852855 A1 20071107; CN 101064109 A 20071031; JP 2007294078 A 20071108; US 2007247746 A1 20071025; US 2007263324 A1 20071115; US 2010296193 A1 20101125; US 7748103 B2 20100706; US 7788797 B2 20100907; US 7952831 B2 20110531

DOCDB simple family (application)

EP 07250702 A 20070220; CN 200710101230 A 20070424; JP 2007088595 A 20070329; US 37996906 A 20060424; US 73589407 A 20070416; US 84979610 A 20100803